

<p>FORM PTO-1390 (REV 3/2001)</p> <p style="text-align: center;">U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE</p> <p style="text-align: center;">TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371</p>		<p>DATE: March 14, 2002</p> <hr/> <p>EXPRESS MAIL LABEL NO. EL717377841US</p> <hr/> <p>ATTORNEY DOCKET NO. 47970/DBP</p> <hr/> <p>U.S. APPLICATION NO. 10/088450</p>
<p>INTERNATIONAL APPLICATION NO. PCT/DE00/03052</p>	<p>INTERNATIONAL FILING DATE September 1, 2000</p>	<p>PRIORITY DATE CLAIMED September 14, 1999</p>
<p>TITLE OF INVENTION CABLE OR BOWDEN CABLE WINDOW LIFTER</p>		
<p>APPLICANT(S) FOR DO/EO/US WEBER, Horst; and HOFMANN, Gerhard</p>		
<p>Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:</p> <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. 3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1). 4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date. 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)). <ol style="list-style-type: none"> a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> has been transmitted by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/LUS). 6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)). 7. <input checked="" type="checkbox"/> A copy of the International Search Report (PCT/ISA/210). 8. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)). <ol style="list-style-type: none"> a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> have been transmitted by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made. 9. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 10. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 11. <input checked="" type="checkbox"/> A copy of the International Preliminary Examination Report (PCT/IPEA/409). 12. <input checked="" type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). <p>Items 13 to 20 below concern document(s) or other information included:</p> <ol style="list-style-type: none"> 13. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 14. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 15. <input checked="" type="checkbox"/> A FIRST preliminary amendment.. 16. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.. 17. <input type="checkbox"/> A substitute specification. 18. <input type="checkbox"/> A change of power of attorney and/or address letter. 19. <input type="checkbox"/> SMALL ENTITY Assertion: Applicant(s) and any other associated with it/them under 37 CFR § 1.27(a) are a small entity. 20. <input checked="" type="checkbox"/> Certificate of Mailing by Express Mail. 21. <input checked="" type="checkbox"/> Other items or information: A. Incorporation of Annex and International Application. B. Extra Set of Drawings 		

U.S. APPLICATION NO. (if known, see 37 CFR 1.5) N/A 10/088450		INTERNATIONAL APPLICATION NO. PCT/DE00/03052		ATTORNEY DOCKET NO. 47970/DBP	
21. The following fees are submitted: <input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO: \$1,040.00 <input checked="" type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$890.00 <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$740.00 <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$710.00 <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00				CALCULATIONS 	
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$ 890	
Surcharge of \$130 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
Claims	Number Filed	Number Extra	Rate		
Total Claims	22+5 -20=	7	X \$18	\$ 126	
Independent Claims	1 -3=	0	X \$84	\$	
Multiple dependent claim(s) (if applicable)			+ \$280	\$ 280	
TOTAL OF ABOVE CALCULATIONS =				\$ 1,296	
Reduction by 1/2 for filing by small entity, if applicable. Verified Small entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28).				\$	
SUBTOTAL =				\$ 1,296	
Processing fee of \$130 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	
TOTAL NATIONAL FEE =				\$ 1,296	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$	
TOTAL FEES ENCLOSED =				\$ 1,296	
Note (1): The basic national fee must be paid when filing this application. The 20-month time limit (37 CFR § 1.494) and 30-month time limit (37 CFR § 1.495) are not extendable.				Amount to be: refunded \$ charged \$	
a. <input checked="" type="checkbox"/> A check in the amount of \$ <u>1,296.00</u> to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>03-1728</u> . A duplicate copy of this sheet is enclosed.					
NOTE (2): Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: D. Bruce Prout CHRISTIE, PARKER & HALE P.O. Box 7068 Pasadena, CA 91109-7068 CUSTOMER NUMBER: 23363					
				By <u>D. Bruce Prout</u> D. Bruce Prout Reg. No. 20,958	

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

EXPRESS MAIL NO. EL717377841US

Applicant : Horst Weber, et al.
Application No. : N/A
Filed : March 14, 2002
Title : CABLE OR BOWDEN CABLE WINDOW LIFTER
Docket No. : 47970/DBP/M521

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Post Office Box 7068
Pasadena, CA 91109-7068
March 14, 2002

Commissioner:

Please amend the above-identified application as follows:

IN THE SPECIFICATION

After the title please add the following:

-- CROSS-REFERENCE TO RELATED APPLICATION

This application claims priority of International application number PCT/DE00/03052, filed September 1, 2000, which in turn claims priority of German application number 199 44 916.3, filed September 14, 1999--.

On Page 8, line 12, delete the paragraph starting with Figure 9, and replace with the following:

-- Figure 9 , including Figs. 9a, 9b, and 9c, shows a plan view and cross-sectional view through a shaped guide rail and a carrier in two phases of the connection between the carrier and the guide rail;--.

IN THE CLAIMS

By this Amendment, Applicants are amending claims 7-8, 11, and 14-22. Pending claims 1 to 22 follow.

1. Cable or Bowden cable window lifter for motor vehicles having at least one guide rail (2, 2') with a longitudinally aligned slot (20, 20') and mounted on a carrier plate (1) of a motor vehicle

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door, a carrier (3, 3') holding a window pane and displaceable along the guide rail (2, 2'), wherein the carrier bears at least in part against the outside (21) and the inside (22) of the guide rail (2, 2') and engages through the slot (20, 20'), reversing devices (5, 5'; 6, 6') mounted at the ends of the guide rail (2, 2'), and a cable (8) in active connection with the carrier (3, 3') and with a drive device (7, 70) and guided over the reversing device, characterised in that the carrier plate (1) itself undertakes the separating and sealing function and that the open side of the guide rails (2, 2') shaped out from the base surface (B) of the carrier plate (1) is covered in a manner which provides a moisture seal.

2. Window lifter according to claim 1 characterised in that the cover (9) is designed flat and is mounted in the plane of the base surface (B) of the carrier plate (1) or the guide rail (2, 2').

3. Window lifter according to claim 1 or 2 characterised in that the cover comprises a permanent adhesive strip (9).

4. Window lifter according to claim 1 or 2 characterised in that the cover consists of a shaped part (10) inserted into the inside (22) of the guide rail (2, 2').

5. Window lifter according to claim 1 or 2 characterised in that the cover consists of a shaped member (11) connected to the carrier plate (1) and resting on the edges of the carrier plate (1) which adjoin the guide rail (2, 2').

6. Window lifter according to claim 1 or 2 characterised in that the cover consists of a shaped member (12) which can be inserted by side projections (121, 122) into grooves (21, 22) of the guide rail (2, 2') which is shaped out of the base surface (B) of the carrier plate (1), or in grooves, slots or hooks on the carrier plate (1), and has a cable socket (123) for guiding the cable (8).

7. (Amended) Window lifter according to claim 4 characterised in that the shaped part (10) or shaped member (11) consists of a moulded plastics part or member.

8. (Amended) Window lifter according to claim 1 characterised in that the carrier (3, 3') is formed in two parts and that the one part (31) of the carrier (3, 3') bears against the outside (21)

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of the guide rail (2, 2') and the other part (32) of the carrier (3, 3') bears against the inside (22) of the guide rail (2, 2').

9. Window lifter according to claim 8 characterised in that the carrier (3, 3') is divided in the region of the cable nipple chamber (36) and has two openings (41, 41'; 42, 42') above and below the cable nipple chamber (36) for holding the counter member which forms the second part (32) of the carrier (3, 3').

10. Window lifter according to claim 9 characterised in that the counter member (32) is made from a sheet metal angle (45) with a plastics insert (46).

11. (Amended) Window lifter according to claim 1 characterised in that the carrier (3, 3') is formed in one piece, that the part (33) of the carrier (3, 3') bearing against the outside (21) of the guide rail (2, 2') is connected to the cable (8) and that the part (34) of the carrier (3, 3') bearing against the inside (22) of the guide rail (2, 2') is shaped so that the carrier (3, 3') can be inserted in the slot (20) of the guide rail (2, 2') and can be connected with keyed engagement with the guide rail (2, 2') whilst displaceable in the longitudinal direction of the guide rail (2, 2').

12. Window lifter according to claim 11 characterised in that the cable (8) is connected eccentrically to the carrier (3, 3').

13. Window lifter according to claim 12 characterised in that the cable (8) is connected to the carrier (3, 3') outside of the guide surface produced by the imprinting of the guide rail (2, 2').

14. (Amended) Window lifter according to claim 1 characterised in that the carrier (3, 3') is formed in one piece and has a longitudinal fixing and slide region (30) which after pushing through the slot (20) of the guide rail (2, 2') and turning the through axis (300) about the transverse axis of the one-piece carrier (3, 3') bears on the outside and inside respectively against the edges of the guide rail (2, 2') which adjoin the slot (20) of the guide rail (2, 2').

15. (Amended) Window lifter according to claim 1 characterised in that the cable (8) is connected centrally relative to the carrier (3, 3') to its cable nipple chamber (36).

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16. (Amended) Cable window lifter according to claim 1 for curved carrier plates characterised in that the cable (8) running between the reversing devices (5, 5'; 6, 6') does not intersect the base surface (B) of the carrier plate (1).

17. (Amended) Window lifter according to claim 1 for curved carrier plates, characterised in that the cable (8) running between the reversing devices (5, 5'; 6, 6') intersects the base surface (B) of the carrier plate (1) at least in parts and that the cover (9) is formed so that it does not contact the cable (8) at any point.

18. (Amended) Window lifter according to claim 1 characterised in that the upper and lower end regions (2a, 2a'; 2b, 2b') of the guide rails (2, 2') are formed like ramps.

19. (Amended) Window lifter according to claim 1 characterised in that the guide rails (2, 2') are formed curved in the longitudinal direction relative to the base surface of the carrier plate (1).

20. (Amended) Window lifter according to claim 1 characterised in that the carrier plate (1) is provided with additional guide slots and/or guide elements shaped out of the base surface (B) of the carrier plate (1) to hold slide or fixing elements connected to structural parts of elements of a vehicle door, more particularly arm rests.

21. (Amended) Window lifter according to claim 1 characterised in that the imprint of the guide rail (2, 2') is formed by deep drawing or stamping a metal carrier plate (1) or by injection moulding or thermoforming a plastics carrier plate (1).

22. (Amended) Window lifter according to claim 1 characterised in that the side edges of the carrier plate (1) are connected sealed against moisture to a carrier plate socket of the vehicle door.

REMARKS

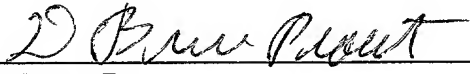
Claims 1-22 remain in the application. Claims 7-8, 11, and 14-22 have been amended. The figure description of Fig. 9 has been amended to identify Figs. 9a 9b, and 9c. It is respectfully requested that the foregoing preliminary amendment be entered prior to examination.

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Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By 
D. Bruce Prout
Reg. No. 20,958
626/795-9900

DBP/aam

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

-- Figure 9 , including Figs. 9a, 9b, and 9c, shows a plan view and cross-sectional view through a shaped guide rail and a carrier in two phases of the connection between the carrier and the guide rail;--.

IN THE CLAIMS

7. (Amended) Window lifter according to ~~[claims 4, 5 or 6]~~ claim 4 characterised in that the shaped part (10) or shaped member (11) consists of a moulded plastics part or member.

8. (Amended) Window lifter according to ~~[at least one of the preceding claims]~~ claim 1 characterised in that the carrier (3, 3') is formed in two parts and that the one part (31) of the carrier (3, 3') bears against the outside (21) of the guide rail (2, 2') and the other part (32) of the carrier (3, 3') bears against the inside (22) of the guide rail (2, 2').

11. (Amended) Window lifter according to ~~[at least one of the preceding claims 1 to 7]~~ claim 1 characterised in that the carrier (3, 3') is formed in one piece, that the part (33) of the carrier (3, 3') bearing against the outside (21) of the guide rail (2, 2') is connected to the cable (8) and that the part (34) of the carrier (3, 3') bearing against the inside (22) of the guide rail (2, 2') is shaped so that the carrier (3, 3') can be inserted in the slot (20) of the guide rail (2, 2') and can be connected with keyed engagement with the guide rail (2, 2') whilst displaceable in the longitudinal direction of the guide rail (2, 2').

14. (Amended) Window lifter according to ~~[at least one of the preceding claims 1 to 7]~~ claim 1 characterised in that the carrier (3, 3') is formed in one piece and has a longitudinal fixing and slide region (30) which after pushing through the slot (20) of the guide rail (2, 2') and turning the through axis (300) about the transverse axis of the one-piece carrier (3, 3') bears on the outside and inside respectively against the edges of the guide rail (2, 2') which adjoin the slot (20) of the guide rail (2, 2').

15. (Amended) Window lifter according to ~~[at least one of the preceding claims]~~ claim 1 characterised in that the cable (8) is connected centrally relative to the carrier (3, 3') to its cable nipple chamber (36).

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16. (Amended) Cable window lifter according to ~~[at least one of the preceding claims]~~ claim 1 for curved carrier plates characterised in that the cable (8) running between the reversing devices (5, 5'; 6, 6') does not intersect the base surface (B) of the carrier plate (1).

17. (Amended) Window lifter according to ~~[at least one of the preceding claims]~~ claim 1 for curved carrier plates, characterised in that the cable (8) running between the reversing devices (5, 5'; 6, 6') intersects the base surface (B) of the carrier plate (1) at least in parts and that the cover (9) is formed so that it does not contact the cable (8) at any point.

18. (Amended) Window lifter according to ~~[at least one of the preceding claims]~~ claim 1 characterised in that the upper and lower end regions (2a, 2a'; 2b, 2b') of the guide rails (2, 2') are formed like ramps.

19. (Amended) Window lifter according to ~~[at least one of the preceding claims]~~ claim 1 characterised in that the guide rails (2, 2') are formed curved in the longitudinal direction relative to the base surface of the carrier plate (1).

20. (Amended) Window lifter according to ~~[at least one of the preceding claims]~~ claim 1 characterised in that the carrier plate (1) is provided with additional guide slots and/or guide elements shaped out of the base surface (B) of the carrier plate (1) to hold slide or fixing elements connected to structural parts of elements of a vehicle door, more particularly arm rests.

21. (Amended) Window lifter according to ~~[at least one of the preceding claims]~~ claim 1 characterised in that the imprint of the guide rail (2, 2') is formed by deep drawing or stamping a metal carrier plate (1) or by injection moulding or thermoforming a plastics carrier plate (1).

22. (Amended) Window lifter according to ~~[at least one of the preceding claims]~~ claim 1 characterised in that the side edges of the carrier plate (1) are connected sealed against moisture to a carrier plate socket of the vehicle door.

CABLE OR BOWDEN CABLE WINDOW LIFTER

Description

5 The invention relates to a cable or Bowden cable window lifter for motor vehicles according to the preamble of claim 1.

10 A cable or Bowden cable window lifter of the kind mentioned above is known from WO 98/50658 and contains an stamped, more particularly deep-drawn carrier plate with stamped guide rails for the carriers of a window pane. The stamped carrier plate consists of a deep-drawn sheet metal profiled section having several sections standing at
15 angles to each other. Guide rails for the cable or Bowden cable window lifter are formed on the surface of the carrier plate by dish stamping or deep-drawing and serve at the same time to hold cable pulley rollers which are mounted on a support element.

20 Before fitting the support elements with the cable pulley rollers fixed thereon, the carriers are fitted onto the guide rails which are formed by dish stamping. The support elements are then pushed onto the ends of the stamped rails and the cable is placed round the cable
25 guide pulleys and connected to the carriers. The carriers slide up or down on the guide rails depending on the pulling direction of the window lifter cable which is guided over the cable guide pulleys whereby if necessary
30 cable mountings arranged on the cable guide pulleys serve to attach the Bowden cable sleeves. A motor-gear unit

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which is provided at a suitable stamped area with apertures on the carrier plate serves to drive the cable of Bowden cable window lifter.

- 5 From US C 50 58 322 a cable window lifter is known having a manual drive with a guide rail with a slot running in the longitudinal direction of the guide rail through which a carrier engages which bears against both sides of the slot of the guide rail. Upper and lower fixing plates are
10 provided at the ends of the guide rail with the guide pulleys arranged thereon. The guide rail itself is formed as a shaped sheet metal part which is fixed together with the upper and lower fixing plate in a vehicle door.
- 15 The object of the present invention is to provide a cable or Bowden cable window lifter of the kind mentioned in the preamble of claim 1 which ensures an exact geometric relationship between the individual parts of the window lifter in one manufacturing step, which allows simple
20 manufacture and assembly as well as selectively a wet space design of a window lifter or wet and dry space separation of the window lifter with simple means and few manufacturing steps.
- 25 This is achieved through the features of claim 1.

The solution according to the invention provides an exact geometric relationship and alignment of the guide rails, the carriers guided thereon and the window pane fixed in
30 the carriers in one manufacturing step, a simple production and assembly of the window lifter as well as when required a wet space design of the window lifter or a wet/dry space separation of the window lifter with simple means and in few manufacturing steps.

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Starting from the cable or Bowden cable window lifter known from WO 98/50658 and having guide rails stamped in the surfaces of a carrier plate, the idea of the present invention is to configure the guide rails and integrate them into the carrier plate so that both a wet space design and also a wet/dry space separation of a cable or Bowden cable window lifter are possible and can be manufactured with simple means. Furthermore the stamping of the carrier plate is to be carried out in only few and preferably in only one work step, and the cable guide should be possible both centrally and also eccentrically in relation to the carriers without the need for structural alterations to the guide rails.

By shaping the at least one guide rail out from the base surface of the carrier plate with a slot running in the longitudinal direction of the thus shaped guide rail whereby the carrier bears against the outside and inside of the slot and engages through the slot as well as through the moisture-proof cover of the open side of the guide rail which is shaped out from the base surface of the carrier plate or through the moisture-proof cover of the base surface itself, both an exact guide of the individual parts of the window lifter and also a readily producible wet/dry space separation of the window lifter is now possible.

By simply covering the curved guide rail in the region of the base surface of the carrier plate it is possible to separate the wet and dry space of the window lifter with the simplest means and to ensure simple assembly and adjustment of the window lifter as well as when required to allow easy access to the individual parts of the cable or Bowden cable window lifter for maintenance or repair purposes.

The cover for the guide rail for separating the wet and dry space can be formed flat and can be arranged in the plane of the base surface of the carrier plate or guide rail. A flat cover of this kind can consist in the simplest form of a permanent adhesive strip or an adhesive foil which is fixed on the edges of the carrier plate adjoining the guide rail which is shaped out of the base surface.

As an alternative the cover can be formed as a part of the door inside trim of the vehicle door, that is can consist of a part which is shaped out correspondingly from the door inside trim and covers the guide rail which is shaped out of the base surface of the carrier plate. With this embodiment the number of parts is reduced and assembly costs are simplified.

Furthermore the cover can consist of a lining which is preferably formed from a foil or foam layer and serves as protection against corrosion or as sound insulation. The lining completely covers the carrier plate so that the cover fulfils a multi-functional purpose, namely that of separating the wet and dry space, guarding against corrosion and acting as sound insulation.

A further design of the cover for the guide rail for separating the wet and dry space comprises a shaped part inserted in the inside of the guide rail so that this type of cover not only acts to separate the wet and dry space but also as a result of its mechanically stable shape can also fulfil stabilising functions and where necessary support functions for the window lifter cable.

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In order to support the window lifter cable the shaped part has a corresponding socket for the window lifter cable and is connected sufficiently securely to the carrier plate in which it is pushed for example in guide grooves of the carrier plate arranged at the side of the guide rail which is made out of the base surface, thereby producing a positive keyed connection with the carrier plate.

Furthermore there is the possibility of forming the carrier in one or more parts and of connecting the window lifter cable to the carrier so that it lies selectively inside the curvature or outside of the guide rail which is shaped out of the base surface of the carrier plate.

With a two-part design of the carrier the one part of the carrier lies against the outside of the guide rail and the other part of the carrier lies against the inside of the guide rail.

The carrier can be divided in the region of the cable nipple chamber and can have two openings above and below the cable nipple chamber to hold the counter member which forms the second part of the carrier and which preferably consists of a sheet metal angle with a plastics insert.

In a one-piece design the carrier has an oblong fixing or slide region which after pushing through the slot of the guide rail and turning about its transverse axis bears on the outside or inside against the edges which adjoin the slot of the guide rail. In this one-piece embodiment the carrier can be inserted in the guide rail anywhere along the guide slot and can be brought by turning about its transverse axis into engagement each side with the edges of the guide slot.

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The window lifter cable can be connected centrally relative to the carrier to its cable nipple chamber. If the cable never passes through the plane of the carrier plate irrespective of the position of the carrier a simple
5 flat adhesive foil can be used as the cover.

If the cable running between the reversing device intersects the base surface of the carrier plate at least at some points then the cover is formed so that it at no
10 point contacts the cable. This can be achieved through configuring the cover to have a curved cross-section.

Shaping out function elements for devices in a vehicle door such as shaping out guide rails for cable or Bowden
15 cable window lifters is not the only purpose of use. Thus a guide slot can be provided in the carrier plate or a guide part shaped out of the base surface of the support plate, through which a slide element or fixing part is pushed and thereby connected, where necessary
20 displaceable, to the carrier plate. The slide element or fixing part can be connected to an arm rest of the vehicle door directly or through fixing elements. Through a corresponding cover of a guide slot of this kind or a guide element shaped out of the base surface it is
25 possible to ensure the required separation of the wet and dry space in the vehicle door and in order to fit an armrest it is possible to make corrections to the positioning during or after assembly to ensure the optimum position of the arm rest.

30 The ramp-shaped design of the upper and lower end region of the guide rails, i.e. the continuous rise of the shaping or stamping of the guide rails out from the base

surface of the carrier plate or the longitudinally curved formation of the guide rails ensures optimum cable guide and insertion into the reversing devices.

- 5 Shaping or stamping out the guide rail from the base surface of the carrier plate can be produced by deep drawing or by stamping a metal carrier plate or by injection moulding or thermo-shaping a plastics carrier plate.

10

In order also to ensure the wet and dry space separation in the side region of the carrier plate according to a further feature of the invention the side parts of the carrier plate are connected in moisture-proof manner to a

15

The idea on which the invention is based will now be explained with reference to the embodiments illustrated in the drawings in which:

20

Figure 1 shows a diagrammatic perspective view of an stamped or deep-drawn carrier plate having integrated guide rails for a single or dual strand cable or Bowden cable window lifter;

25

Figures 2/3 are a plan view and inclined view respectively of a carrier plate with integrated guide rails, cable guide pulleys, reinforcing stamped regions and socket openings for component parts of a

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motor vehicle door or a door module;

Figures 4 to 7 shows cross-sectional views through a guide rail shaped out of the base surface of the carrier plate and single and two-part carriers connected to the guide rail;

Figure 8 shows a cross-sectional view through a guide rail shaped out from the base surface of a carrier plate and having side guide grooves and a cover connected with keyed engagement to the guide rail;

Figure 9 shows a plan view and cross-sectional view through a shaped guide rail and a carrier in two phases of the connection between the carrier and the guide rail;

Figure 10 shows a perspective view through a two-part carrier prior to connection of the two carrier parts; and

Figure 11 shows the two-part carrier according to Figure 10 in the assembled state.

The carrier plate 1 illustrated in Figure 1 has two guide rails 2, 2' which are shaped out from the base surface of the carrier plate 1 by stamping or deep drawing and on which carriers 3, 3' holding a window pane are mounted displaceable in the longitudinal direction of the guide rails 2, 2'. The carriers 3, 3' are connected to a cable 8 which is guided over cable guide pulleys 5, 5' in the region of the upper edge of the carrier plate 1 as well as cable guide pulleys 6, 6' in the region of the lower edge of the carrier plate 1. The cable is connected to a cable drum 70 which is driven by a motor gear unit 7.

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The carriers 3, 3' are guided in a slot 20, 20' which is provided in the longitudinal direction of the stamped guide rails 2, 2' and - as will be explained in further detail below with reference to Figures 4 to 7 - bear
5 against both the outside and inside of the shaped area of the guide rails 2, 2'.

Figure 1 shows a wet/dry space separation in the cable or Bowden cable window lifter since the moisture-sensitive
10 motor gear unit 7 is mounted on the dry space side of the carrier plate 1 which is at the back in the viewing direction and is indicated by the arrow T, whilst the carriers 3, 3', the cable 8 and the cable drum 70 are provided on the wet space side which is indicated by arrow
15 N and is located on the front side of the carrier plate 1 in the viewing direction. In order to separate the wet and dry spaces the cable drum 70 is connected to the motor gear unit 7 through a drive shaft which is pushed through a bore of the carrier plate 1, with the passage of the
20 drive shaft through the carrier plate 1 being sealed off.

As can already be seen from the arrangement of the individual parts of the cable or Bowden cable window lifter according to Figure 1 the wet/dry space separation
25 can be easily undertaken and guaranteed by simply covering the open base surface of the guide rails 2, 2' in the plane of the base surface of the carrier plate 1.

Through the one-piece embodiment with the guide rails 2, 2' shaped out of the base surface B of the carrier plate 1 and integrated in said carrier plate 1 and with the resulting defined spacing between the two guide rails 2, 2' it is possible to observe very close tolerances during production in only one work step. Furthermore the
30 proposed reinforcing stamped regions which can be seen from the illustration of the carrier plate 1 in Figures 2

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and 3 enable an open system and in addition as a result of the strengthening achieved through the reinforcing stamped regions a lighter weight construction by using thinner materials whilst maintaining at the same time a high resistance to side impacts.

The stamped or deep-drawn carrier plate 1 illustrated in front view in Figure 2 and in an inclined view in Figure 3 shows the formation of the carrier plate 1 as well as the different regions of the material structure which are formed by stamping or deep-drawing the base surface B of the carrier plate 1.

The guide rails 2, 2' which are shaped out and have a slot 20, 20' running in the longitudinal direction thereof project out from the base surface B of the carrier plate 1. At the ends of the guide rails 2, 2' are the cable guide pulleys 5, 5' and 6, 6' which are arranged so that the cable is introduced into the slot 20, 20' and can be connected to the carriers which are mounted displaceable in the longitudinal direction of the guide rails 2, 2' which are shaped out from the base surface of the carrier plate 1. The surface of the carrier plate 1 which is located between the guide rails 2, 2' is shaped so that the cable of the cable or Bowden cable window lifter runs above the surface of the carrier plate 1 without contacting the carrier plate 1 and can be connected to the cable drum (not shown here) of the motor gear unit of the cable or Bowden cable window lifter.

For the optimum cable guide the upper and lower end regions 2a, 2a', and 2b, 2b' of the guide rails 2, 2' which are shaped out from the base surface of the carrier plate 1 are formed like ramps, i.e. starting from their ends they rise in these end regions continuously up to the shaped height, which is indicated by the compaction of the

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cross lines in the slot 20 and 20' up to the change into the cable guide pulleys 5,5' and 6, 6'.

5 Alternatively the guide rails shaped out from the base surface of the carrier plate 1 can be curved in the longitudinal direction, which likewise ensures an optimum cable guide and insertion into the reversing devices.

10 The stamped regions which can be seen from the illustrations of the carrier plate 1 in Figure 2 and 3 show the structuring of the carrier plate 1 where despite the reduced material thickness of the carrier plate 1 it has optimum strength particularly in relation to side impact forces.

15 Different regions (not shown in further detail) of the carrier plate 1 serve to hold, fix or position door component parts such as speakers, lock systems or the like.

20 Figure 4 shows a cross-section through a guide rail 2 shaped from the base surface of the carrier plate 1 along the line IV-IV according to Figure 1 with a slot 20 arranged in the apex of the shaped area and a two-part carrier 3 mounted on the arched guide rail 2 whereby the outer part 31 of this carrier bears against the outside 21 of the guide rail 2 and its inner part 32 bears against the inside 22 of the shaped area of the guide rail 2. A slot 35 in the outside and/or inside part 31, 32 of the two-part carrier 3 serves to receive and guide the cable 8 which is connected to the carrier 3 in a cable nipple chamber of said carrier 3.

35 A cover 9 is provided in the plane of the base surface B of the carrier plate 1 to separate the wet and dry space of the cable or Bowden cable window lifter. In the

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simplest case this cover can be a permanent adhesive strip of sufficient width which is stuck on the dry space side of the carrier plate 1 on the edges adjoining the guide rail 2 shaped out from the base surface of the carrier plate 1, thereby forming an effective moisture barrier in the region of the open base surface of the guide rail 2.

Figure 5 shows a cross-section through a guide rail 2 shaped out from the base surface of the carrier plate 1 and having a slot 20 formed in the apex of the shaped area and running in the longitudinal direction of the guide rail 2 to hold a one-piece carrier 3. The one-piece carrier 3 is shaped so that one part 33 of the carrier 3 bears against the outside of the guide rail 2 whilst the other part bears against the inside of the guide rail 2.

The inner part 34 of the one-piece carrier 3 and/or the part of the one-piece carrier 3 engaging through the slot 20 is configured so that the one-piece carrier 3 can be snap-fitted through the slot 20 into the guide rail 2 from outside the said guide rail 2 which is shaped out from the base surface of the carrier plate 1. By way of example this can be achieved by suitably shaping the inside part 34 and by inserting the one-piece carrier 3 into the slot 20 and then turning the carrier 3. Alternatively the one-piece carrier 3 can be inserted inclined into the slot 20 and then through a subsequent tilting action can be connected with keyed engagement with the guide rail 2 where it is displaceable in the longitudinal direction of same.

As opposed to the two-part carrier 3 illustrated in Figure 4 the one-piece carrier 3 illustrated in Figure 5 has an eccentric fixing of the cable 8. The eccentric attachment of the cable to the carrier 3, unlike the central attachment of the cable, produces a tilting moment which

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during longitudinal displacement of the carrier 3 leads to a somewhat increased friction and thus to higher friction losses. These losses can however be minimised through suitably matching up the materials.

5

With a curved carrier plate 1 it should additionally be observed that the cable connected to the carrier 3 and guided over the cable guide pulleys 5 and 6 at the ends of the guide rail 2 which is shaped out from the base surface of the carrier plate 1 does not intersect the base surface of the carrier plate 1, i.e. there should be adequate distance between the cable guide and the carrier plate 1. This can be clearly seen in Figure 5 through the cable marked by 8' in the case of a curved carrier plate 1.

15

The arrangement illustrated in Figure 5 likewise shows a wet and dry space separation by attaching a permanent adhesive strip 9 on the dry space side of the carrier plate 1 along the guide rail 2 which has been shaped out from the base surface of the carrier plate 1. For this type of wet /dry space separation it is possible to use in place of a simple permanent adhesive strip 9 also any other type of cover part. Figures 6 and 7 show in connection with a single or two-part carrier 3 different forms for covering the guide rail 2 shaped out of the base surface of the carrier plate 1 in order to separate the wet and dry space.

20

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Figure 6 shows a cover for the base of the guide rail in the region of the base surface of the carrier plate 1 using a shaped part 10 which is preferably made from plastics and is inserted in the guide rail 2 which is shaped out from the base surface of the carrier plate 1. This shaped part 10 can be inserted with force-locking or positive keyed engagement into the opening formed by the shaped areas of the guide rail 2.

30

35

Figure 7 shows the possibility for separating the wet and dry space using a moulded plastics member 11 which bears against the side edges adjoining the opening of the guide rail 2 shaped out from the base surface of the carrier plate 1, and is connected by suitable means, for example by an adhesive or push-fit connection, with the dry space side of the carrier plate 1.

Figure 8 shows a guide rail 2 shaped out from the base surface of a carrier plate 1 and having side grooves 21, 22 which adjoin the base surface of the carrier plate 1. A cover 12 having side projections 121, 122 corresponding to these grooves 21, 22 is inserted into said grooves 21, 22. The stable embodiment of the cover 12 in connection with a cable guide 123 arranged in the region of the window lifter cable 8 produces an extremely stable cover for separating the wet and dry space whilst at the same time guiding the window lifter cable 8. The carrier 3 can be selectively formed in one or two parts according to the previous embodiments and the one-piece embodiment of a carrier according to Figure 9.

Figure 9a shows a plan view of the underneath of a one-piece carrier 3 having an oblong fixing and slide region 30 which is connected through a cylindrical through-axis 300 to the part of the carrier 3 bearing against the outside of the guide rail 2.

This one-piece carrier 3 is inserted from outside of the guide rail 2 into the slot 20 of the guide rail, with the fixing and slide region 30 aligning with the slot 20 of the guide rail 2.

By turning the one-piece carrier 3 about 90 degrees the oblong fixing and slide region 30 moves against the inside

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of the guide rail 2 thereby establishing a keyed connection between the carrier 3 and the guide rail 2 shaped out from the base surface of the carrier plate 1 whilst maintaining the longitudinal displaceability of the carrier 3 relative to the longitudinal extension of the guide rail 2.

For the cover it is possible to use one of the covers described above, for example an adhesive strip or a flat foil 9 which is placed on and then connected to the edges of the guide rail 2 shaped out from the base surface of the carrier plate 1

Figures 10 and 11 show an embodiment of a two-piece carrier before and after the connection of the two constituent parts, which is particularly suitable for connecting with a guide rail 2, 2' shaped in the manner described above from the base surface of the carrier plate 1.

The carrier 3 has a window pane socket 37 in which a window pane is inserted and connected to the carrier 3. To compensate tilting movements in the window pane resilient tongues 38, 38' are provided on the underneath of the window pane socket 37. The carrier base body 31 of the two-part carrier 3 has a cable nipple chamber 36 along which runs the dividing line between the carrier base body 31 and a counter member 32, i.e. the two parts 31, 32 which make up the two-part carrier 3.

Openings 41, 41' and 42, 42' are provided above and below the cable nipple chamber 6 to hold connecting webs 43, 43'; 44, 44' of the counter member 32 of the carrier 3 which to connect the carrier base body 31 to the counter member 32 engage with detent action in the openings 41, 41' and 42, 42' respectively and which after connecting

- 16 -

the counter member 32 to the carrier base body 31 establish by bending or another way a fixed positive keyed connection between the two parts 31, 32 of the two-part carrier 3 after it has been fitted on the guide rail 2, 2' which is shaped out from the base surface of the carrier plate 1.

10 A cable opening 39, 40 of the cable nipple chamber 36 is provided between the openings 41, 41' and 42, 42' to receive the cable which is connected in the cable nipple chamber 36 fixedly to the carrier 3 for example through the arrangement of a shaped member fixed on the cable.

15 The counter member 32 of the carrier 3 preferably consists of a sheet metal angle plate 45 with angled connecting webs 43, 43' and 44, 44' as well as a plastics insert 46 which in the assembled state of the carrier 3 illustrated in Figure 11 bears against the inside of the guide rail 2, 2' which is shaped out from the base surface of the carrier plate 1.

20

* * * * *

New claim 1

05.11.2001

1. Cable or Bowden cable window lifter for motor vehicles
5 having at least one guide rail (2, 2') with a
longitudinally aligned slot (20, 20') and mounted on a
carrier plate (1) of a motor vehicle door, a carrier (3,
3') holding a window pane and displaceable along the guide
10 rail (2, 2'), wherein the carrier bears at least in part
against the outside (21) and the inside (22) of the guide
rail (2, 2') and engages through the slot (20, 20'),
reversing devices (5, 5'; 6, 6') mounted at the ends of
the guide rail (2, 2'), and a cable (8) in active
15 connection with the carrier (3, 3') and with a drive
device (7, 70) and guided over the reversing device,

characterised in that

20 the carrier plate (1) itself undertakes the separating and
sealing function and that the open side of the guide rails
(2, 2') shaped out from the base surface (B) of the
carrier plate (1) is covered in a manner which provides a
moisture seal.

New claims

18.09.2001

- 5 2. Window lifter according to claim 1 **characterised in that** the cover (9) is designed flat and is mounted in the plane of the base surface (B) of the carrier plate (1) or the guide rail (2, 2').

5 2. Window lifter according to claim 1 **characterised in that** the cover (9) is designed flat and is mounted in the plane of the base surface (B) of the carrier plate (1) or the guide rail (2, 2').

New claims

18.09.2001

- 5 3. Window lifter according to claim 1 or 2 **characterised in that** the cover comprises a permanent adhesive strip (9).
- 10 4. Window lifter according to claim 1 or 2 **characterised in that** the cover consists of a shaped part (10) inserted into the inside (22) of the guide rail (2, 2').
- 15 5. Window lifter according to claim 1 or 2 **characterised in that** the cover consists of a shaped member (11) connected to the carrier plate (1) and resting on the edges of the carrier plate (1) which adjoin the guide rail (2, 2').
- 20 6. Window lifter according to claim 1 or 2 **characterised in that** the cover consists of a shaped member (12) which can be inserted by side projections (121, 122) into grooves (21, 22) of the guide rail (2, 2') which is shaped out of the base surface (B) of the carrier plate (1), or
- 25 in grooves, slots or hooks on the carrier plate (1), and has a cable socket (123) for guiding the cable (8).

AMENDED PAGE

New claims

18.09.2001

5 7. Window lifter according to claims 4, 5 or 6
characterised in that the shaped part (10) or shaped
member (11) consists of a moulded plastics part or member.

10 8. Window lifter according to at least one of the
preceding claims **characterised in that** the carrier (3, 3')
is formed in two parts and that the one part (31) of the
carrier (3, 3') bears against the outside (21) of the
guide rail (2, 2') and the other part (32) of the carrier
15 (3, 3') bears against the inside (22) of the guide rail
(2, 2').

20 9. Window lifter according to claim 8 **characterised in
that** the carrier (3, 3') is divided in the region of the
cable nipple chamber (36) and has two openings (41, 41';
42, 42') above and below the cable nipple chamber (36) for
holding the counter member which forms the second part
(32) of the carrier (3, 3').

25 10. Window lifter according to claim 9 **characterised in
that** the counter member (32) is made from a sheet metal
angle (45) with a plastics insert (46).

AMENDED PAGE

New claims

18.09.2001

11. Window lifter according to at least one of the
5 preceding claims 1 to 7 **characterised in that** the carrier
(3, 3') is formed in one piece, that the part (33) of the
carrier (3, 3') bearing against the outside (21) of the
guide rail (2, 2') is connected to the cable (8) and that
10 the part (34) of the carrier (3, 3') bearing against the
inside (22) of the guide rail (2, 2') is shaped so that
the carrier (3, 3') can be inserted in the slot (20) of
the guide rail (2, 2') and can be connected with keyed
engagement with the guide rail (2, 2') whilst displaceable
15 in the longitudinal direction of the guide rail (2, 2').

12. Window lifter according to claim 11 **characterised in
that** the cable (8) is connected eccentrically to the
20 carrier (3, 3').

13. Window lifter according to claim 12 **characterised in
that** the cable (8) is connected to the carrier (3, 3')
outside of the guide surface produced by the imprinting of
25 the guide rail (2, 2').

14. Window lifter according to at least one of the
preceding claims 1 to 7 **characterised in that** the carrier
(3, 3') is formed in one piece and has a longitudinal
30 fixing and slide region (30) which after pushing through
the slot (20) of the guide rail (2, 2') and turning the
through axis (300) about the transverse axis of the one-
piece carrier (3, 3') bears on the outside and inside
respectively against the edges of the guide rail (2, 2')
35 which adjoin the slot (20) of the guide rail (2, 2').

New claims

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18.09.2001

15. Window lifter according to at least one of the preceding claims **characterised in that** the cable (8) is
5 connected centrally relative to the carrier (3, 3') to its cable nipple chamber (36).

10 16. Cable window lifter according to at least one of the preceding claims for curved carrier plates **characterised in that** the cable (8) running between the reversing devices (5, 5'; 6, 6') does not intersect the base surface (B) of the carrier plate (1).

15 17. Window lifter according to at least one of the preceding claims for curved carrier plates, **characterised in that** the cable (8) running between the reversing devices (5, 5'; 6, 6') intersects the base surface (B) of
20 the carrier plate (1) at least in parts and that the cover (9) is formed so that it does not contact the cable (8) at any point.

New claims

18.09.2001

18. Window lifter according to at least one of the
5 preceding claims **characterised in that** the upper and lower
end regions (2a, 2a'; 2b, 2b') of the guide rails (2, 2')
are formed like ramps.

10 19. Window lifter according to at least one of the
preceding claims **characterised in that** the guide rails (2,
2') are formed curved in the longitudinal direction
relative to the base surface of the carrier plate (1).

15 20. Window lifter according to at least one of the
preceding claims **characterised in that** the carrier plate
(1) is provided with additional guide slots and/or guide
elements shaped out of the base surface (B) of the carrier
20 plate (1) to hold slide or fixing elements connected to
structural parts of elements of a vehicle door, more
particularly arm rests.

21. Window lifter according to at least one of the
25 preceding claims **characterised in that** the imprint of the
guide rail (2, 2') is formed by deep drawing or stamping a
metal carrier plate (1) or by injection moulding or
thermoforming a plastics carrier plate (1).

New claims

18.09.2001

22. Window lifter according to at least one of the
5 preceding claims **characterised in that** the side edges of
the carrier plate (1) are connected sealed against
moisture to a carrier plate socket of the vehicle door.

AMENDED PAGE

(12) NACH DEM VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS (PCT) VERÖFFENTLICHTE INTERNATIONALE ANMELDUNG

(19) Weltorganisation für geistiges Eigentum
Internationales Büro



(43) Internationales Veröffentlichungsdatum
22. März 2001 (22.03.2001)

PCT

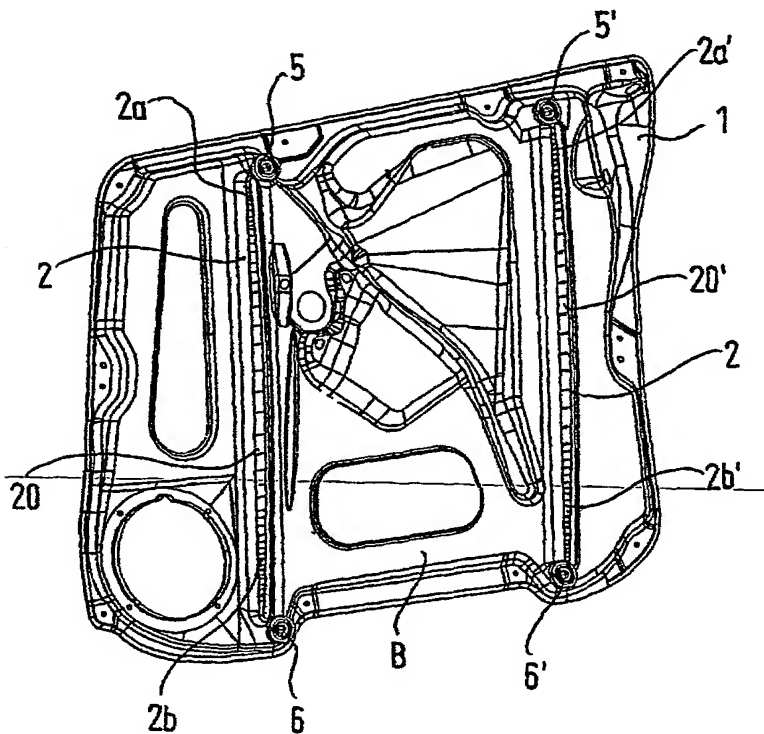
(10) Internationale Veröffentlichungsnummer
WO 01/20114 A1

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- (22) Internationales Anmeldedatum:
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[Fortsetzung auf der nächsten Seite]

(54) Title: **WINDOW LIFT COMPRISING A ROPE OR BOWDEN CABLE**

(54) Bezeichnung: **SEIL-ODER BOWDENFENSTERHEBER**



(57) Abstract: The invention relates to a window lift which comprises a rope or a Bowden cable and is used in motor vehicles. The inventive window lift comprises guiding rails (2, 2') that are integrated into the base surface (B) of a carrier plate (1) pertaining to a door of a motor vehicle, whereby said rails are embodied as one component. The inventive window lift also comprises carriers (3, 3') that can be displaced along the guiding rails (2, 2') and receive a window pane as well as reversing devices (5, 5' or 6, 6') that are arranged at the ends of the guiding rails (2, 2'). Said window lift further comprises a rope which engages with the carriers (3, 3') and a drive device and is guided via the reversing devices (5, 5' or 6, 6'). The guiding rails (2, 2') protrude from the base surface (B) of the carrier plate (1), are provided with a slit (20, 20') that extends in the longitudinal direction and are covered on the open base side thereof in a dampproof manner, whereby said base side serves for damp/wet room separation. The carriers (3, 3') are at least partially situated on the external and internal side of said guiding rails (2,

2') and pass through the respective slit (20, 20') such that said rails engage therewith.

(57) Zusammenfassung: Seil- oder Bowdenfensterheber für Kraftfahrzeuge mit einstückig in die Basisfläche B einer Trägerplatte (1) einer Kraftfahrzeugtür integrierten Führungsschienen (2, 2'), entlang den Führungsschiene (2, 2') verschiebbaren, eine Fenster-scheibe aufnehmenden Mitnehmern (3, 3'), an

[Fortsetzung auf der nächsten Seite]

WO 01/20114 A1

Fig. 1

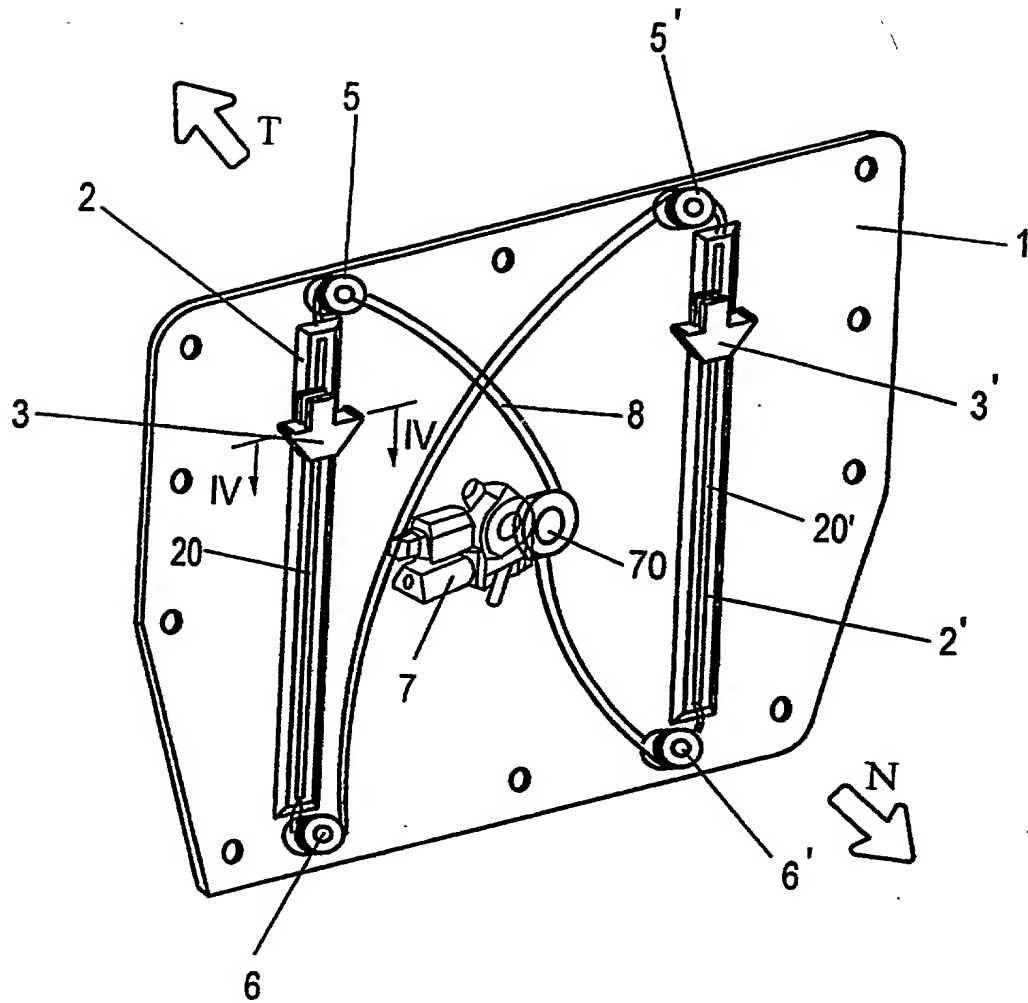


Fig. 4

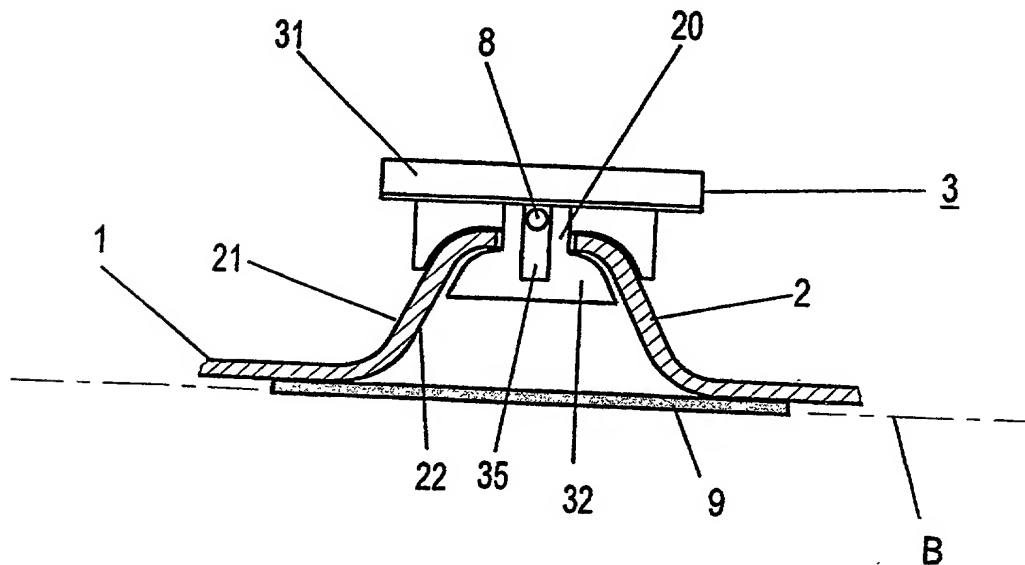


Fig. 2

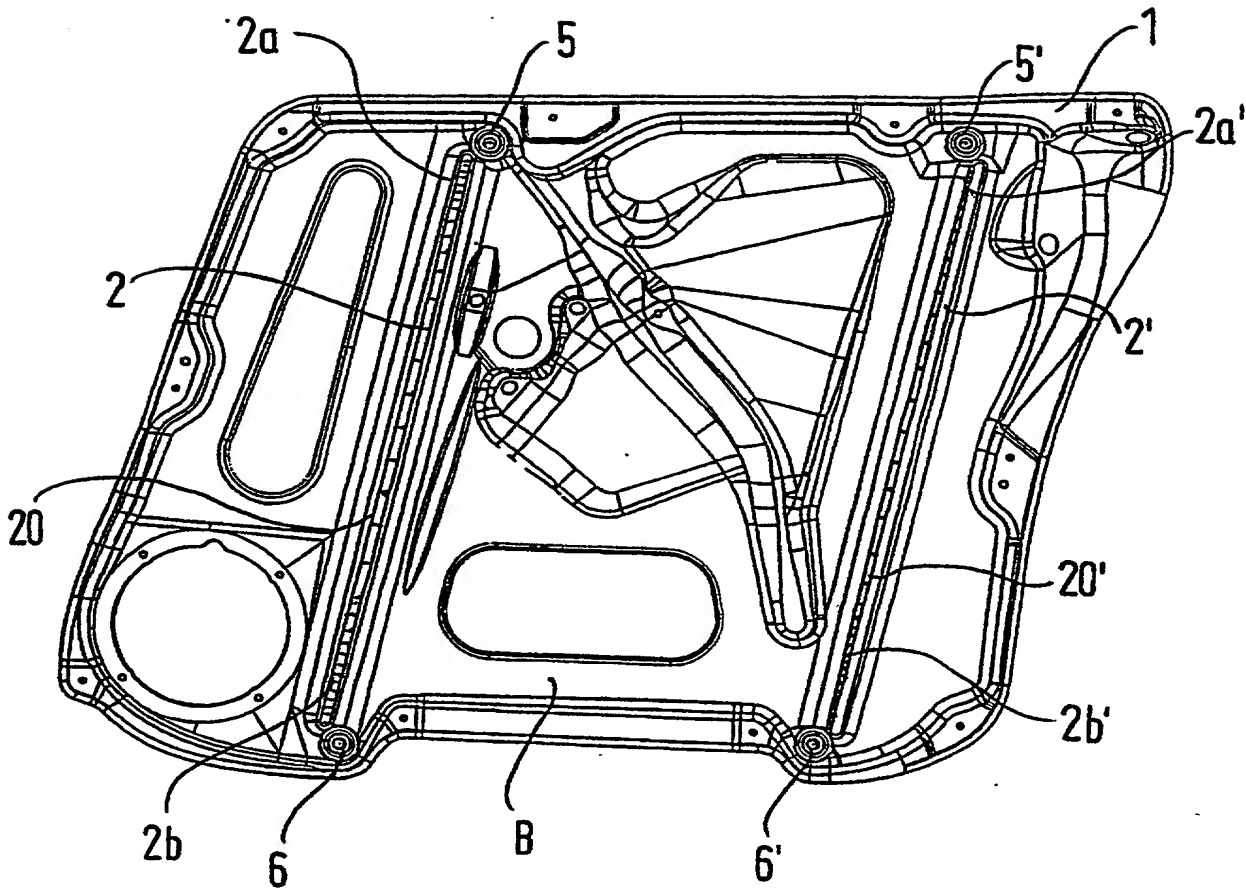


Fig. 3

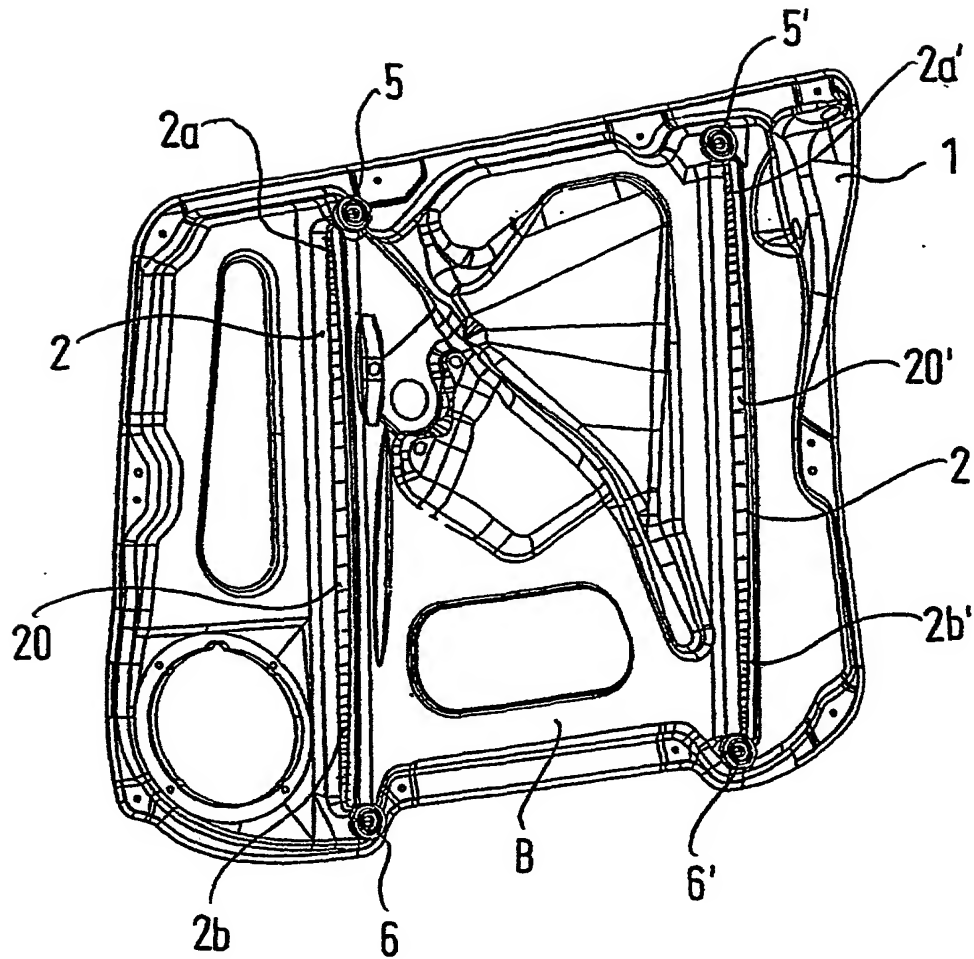


Fig. 5

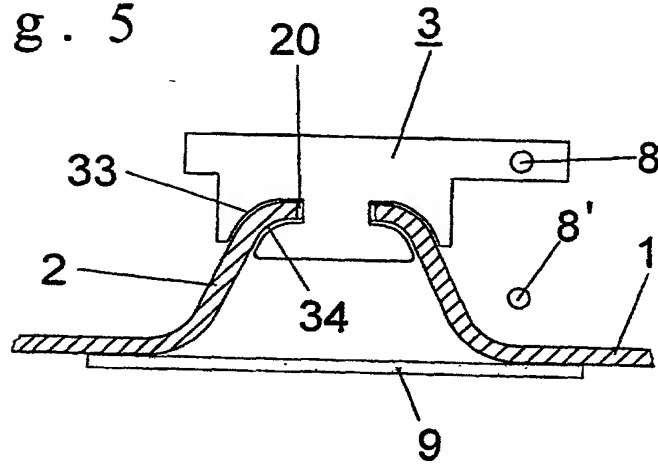


Fig. 6

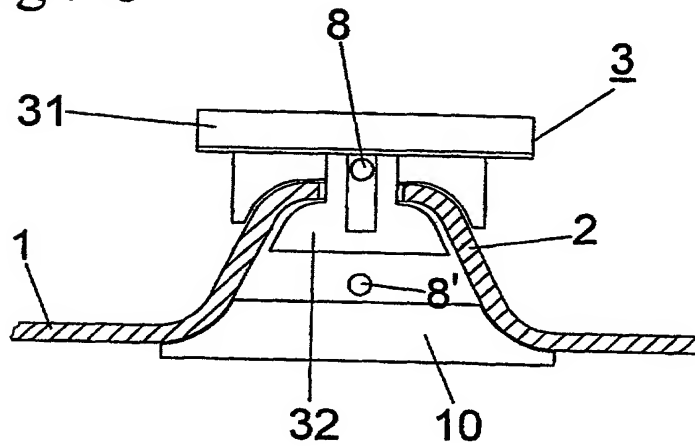


Fig. 7

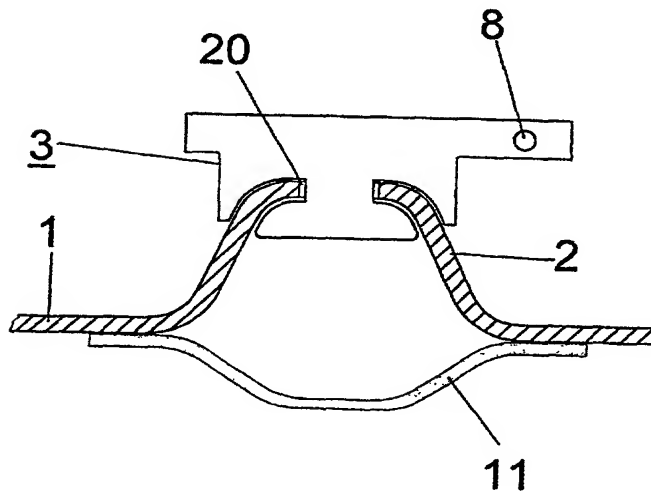


Fig. 8

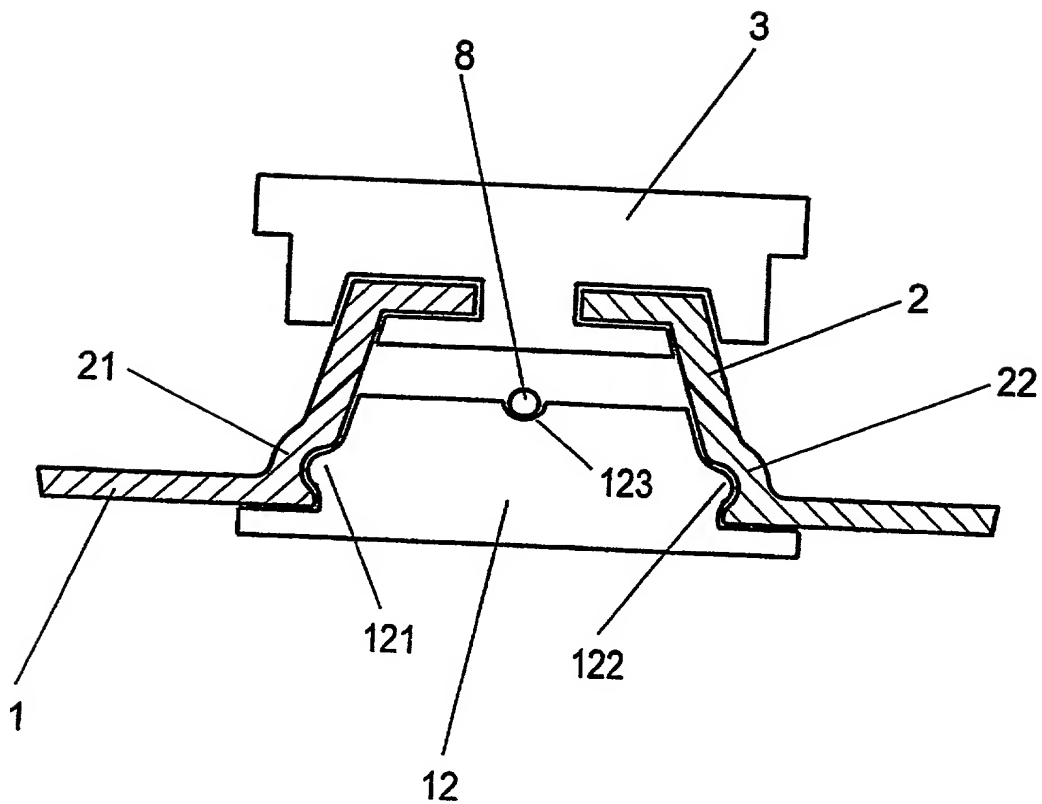


Fig. 9a

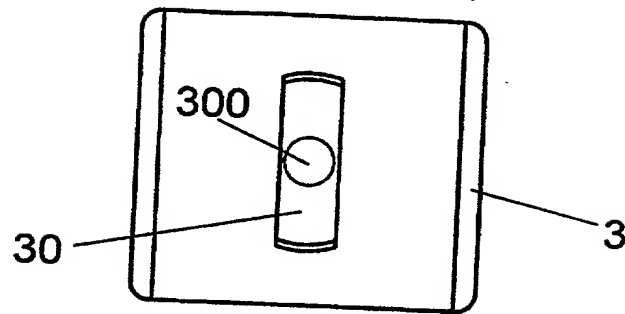


Fig. 9b

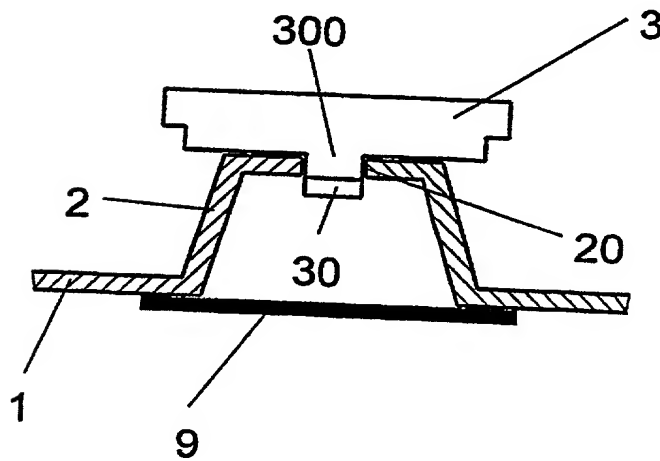


Fig. 9c

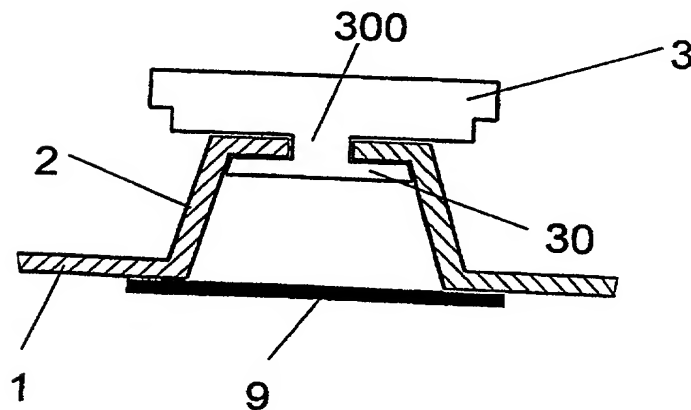


Fig. 10

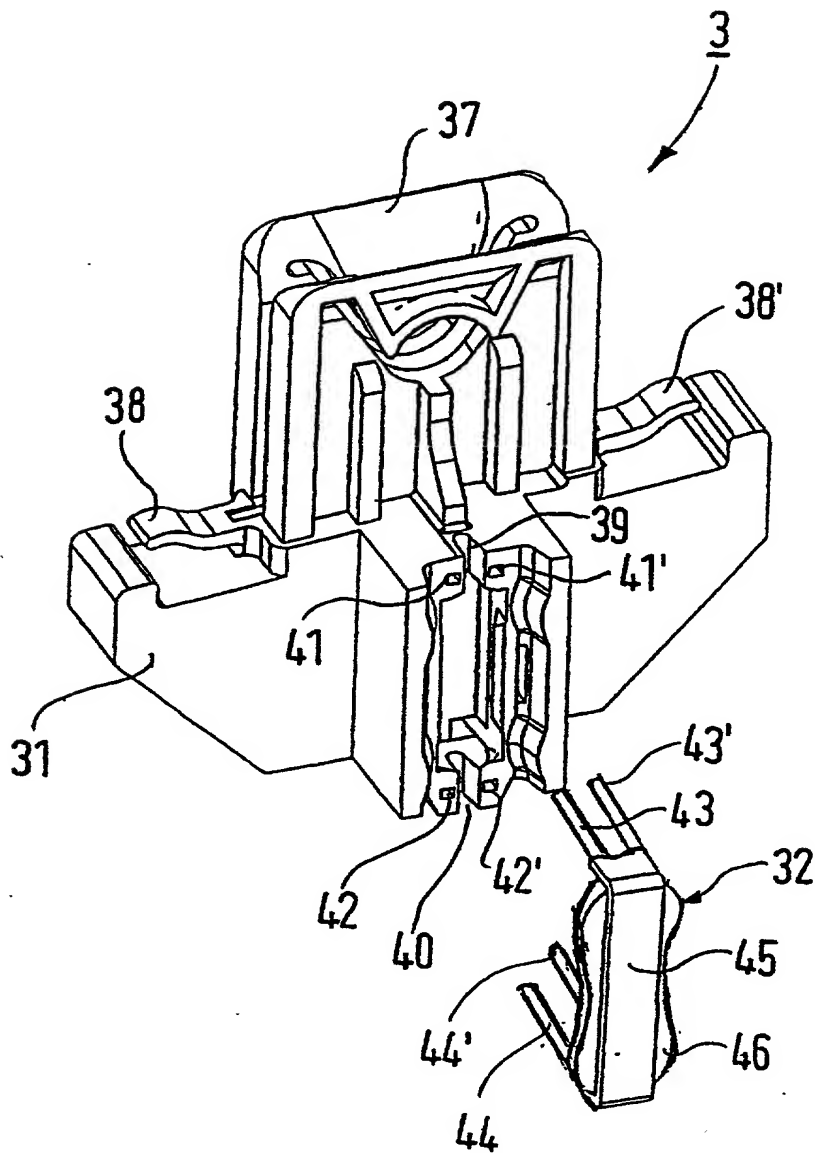
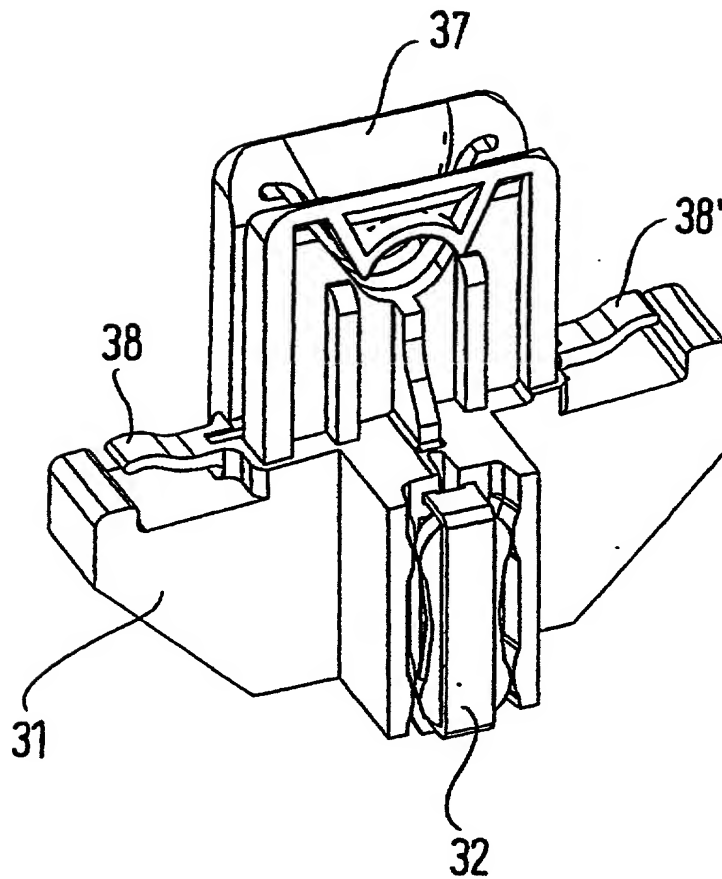


Fig. 11



Rev. 11/00

DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION

PATENT

Docket No. : 47970/DBPM521

As a below named inventor, I hereby declare that:

My residence, mailing address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled CABLE OR BOWDEN CABLE WINDOW LIFTER, the specification of which is attached hereto unless the following is checked:

☒ was filed on September 1, 2000 as United States Application Number or PCT International Application Number PCT/DE 00/08052 and was amended on (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT International filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of the foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States of America, listed below and have also identified below, any foreign application for patent or inventor's certificate, or any PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

<u>Application Number</u>	<u>Country</u>	<u>Filing Date (day/month/year)</u>	<u>Priority Claimed</u>
199 44 916.3	Germany	14 September 1999	Yes

I hereby claim the benefit under 35 U.S.C. § 119(a) of any United States provisional application(s) listed below.

<u>Application Number</u>	<u>Filing Date</u>
---------------------------	--------------------

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112.

<u>Application Number</u>	<u>Filing Date</u>	<u>Patented/Pending/Abandoned</u>
---------------------------	--------------------	-----------------------------------

POWER OF ATTORNEY: I hereby appoint the following attorneys and agents of the law firm CHRISTIE, PARKER & HALE, LLP to prosecute this application and any international application under the Patent Cooperation Treaty based on it and to transact all business in the U.S. Patent and Trademark Office connected with either of them in accordance with instructions from the assignee of the entire interest in this application:



**DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION**

Docket No. 47970/DBP/M521

or from the first or sole inventor named below in the event the application is not assigned; or from Maikowski & Ninnemann, in the event the power granted herein is for an application filed on behalf of a foreign attorney or agent.

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Richard D. Seibel	(22,134)	Joel A. Kauth	(41,886)	Peter A. Nichols	(47,822)
Walter G. Maxwell	(25,865)	Patrick Y. Ikehara	(42,881)	David J. Steele	(47,317)
William P. Christie	(28,371)	Mark Garcia	(31,953)	Laurence H. Pretty	(25,312)
David A. Dillard	(30,831)	Gary J. Nelson	(44,287)	Robert A. Schroeder	(25,378)
Thomas J. Daly	(32,213)	Raymond E. Tabandeh	(43,845)	Richard A. Wallen	(22,671)
Vincent G. Gioia	(19,959)	Cynthia A. Bonner	(44,542)	Michael J. MacDonnet	(29,946)
Edward R. Schwartz	(31,136)	Jun-Young E. Jeon	(43,893)	Anna Wang	(36,045)
John D. Carpenter	(34,183)	Marc A. Karich	(44,616)	Richard A. Clegg	(33,486)
David A. Plumley	(37,208)	John P. O'Rourke	(38,985)	Naru J. Patel	(39,659)
Wesley W. Monroe	(39,778)	Richard J. Paculan	(28,248)	Tom H. Dao	(44,641)
Gregory S. Lampert	(35,581)	Josephine R. Chang	(45,082)	James M. Collison	(P-50,517)
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The authority under this Power of Attorney of each person named above shall automatically terminate and be revoked upon such person ceasing to be a member or associate of or of counsel to that law firm.

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I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION

Docket No. 47970/DEP/M631

1-00

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2-00

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